

**REMARKS**

Claims 58-83 are pending after entry of the amendments set forth herein.

Claims 81 and 83 were examined and rejected.

Applicants respectfully request reconsideration of the application in view of the remarks made herein.

**The Office Action contains an error**

On page 7 of this Office Action, the Examiner states that claims 81 and 83 are rejected under 35 U.S.C. §103(a) as being unpatentable over Khosla (6,391,594) “for the reasons set forth in the last office action.”

However, the Applicants note that no rejections under 35 U.S.C. §103(a) were made in the last Office Action, and, as such, the last Office Action did not set forth any reasons why the rejected claims are obvious in view of Khosla.

In view of the foregoing discussion, the Applicants respectfully submit that this Office Action contains an error, since it refers to a rejection in a prior Office Action that was never actually made.

The Applicants are therefore unable to fully respond to this rejection.

However, in the section entitled “Rejection under 35 U.S.C. §103-Khosla”, below, the Applicants have argued that Khosla fails to disclose, teach or otherwise suggest an element of the claimed invention: binding sequences. Should the Examiner find these arguments persuasive, the Examiner is respectfully requested to withdraw the rejection. **Should the Examiner find these arguments unpersuasive, the Examiner is respectfully to withdraw this Office Action** in favor of a revised Office Action to fully set the reasoning for the rejection, including an explanation of how Khosla’s disclosure can be interpreted to disclose binding sequences.

**This Office Action should be a non-final Office Action**

The instant Office Action is indicated as being a Final Office Action.

However, the Applicants note that the claims are newly rejected under 35 U.S.C. § 103 over Nolan. This is a new ground of rejection not necessitated by an amendment or information submitted in an IDS.

Since this new ground of rejection was not necessitated by an amendment or information submitted in an IDS, pursuant to §706.07(a)<sup>1</sup> the Applicants respectfully submit that the Office Action is improperly indicated as a final Office Action.

In view of the foregoing discussion, the Applicants respectfully request that the finality of this Office Action be withdrawn.

**Rejection under 35 U.S.C. §112, first paragraph (written description)**

Claims 81 and 83 are rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was assertedly not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This rejection is respectfully traversed.

In this Office Action, the Office appears to acknowledge that the molecular components of the enzymatic complex recited in the claimed method are well known. However, the claims remain rejected because the specification assertedly lacks a detailed description of how those molecular components can be combined to produce an enzymatic complex.

In response, the Applicants respectfully submit that no invention should be deemed to be inadequately described solely because a specification for that invention does not explicitly describe in detail an example of the invention. This is not, and has never been, a principle of patent law.

To the contrary, in discussing the level of disclosure required in a patent application, the MPEP is explicitly clear: a patent specification need not teach, and preferably omits, what is well known in the art.<sup>2</sup> Likewise, the Courts, too, have repeatedly explained that a patent application does not need to include in the specification every last detail of the invention since the specification is intended to be read by one of skill in the art<sup>3</sup>.

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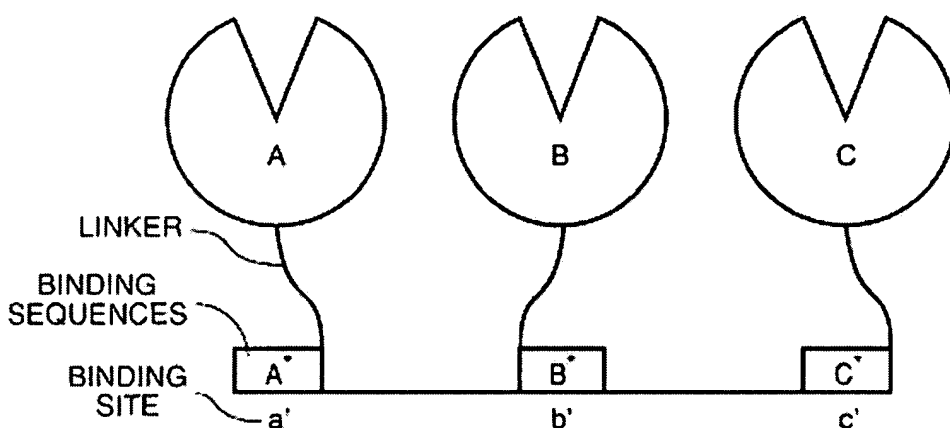
<sup>1</sup> As indicated in MPEP §706.07(a), a second or any subsequent action on the merits shall be made final, except where the examiner introduces a new ground of rejection that is neither necessitated by applicant's amendment of the claims nor based on information submitted in an information disclosure statement (IDS) filed during the period set forth in 37 C.F.R. §1.97(c).

<sup>2</sup> MPEP at § 2164.01 "A patent need not teach, and preferably omits, what is well known in the art." citing *In re Buchner*, 929 F.2d 660, 661, 18 USPQ2d 1331, 1332 (Fed. Cir. 1991); *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1384, 231 USPQ 81, 94 (Fed. Cir. 1986), *cert. denied*, 480 U.S. 947 (1987); and *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 1463, 221 USPQ 481, 489 (Fed. Cir. 1984).

<sup>3</sup> *Paperless Accounting, Inc. v. Bay Area Rapid Transit Sys.*, 804 F.2d 659, 664 (Fed. Cir. 1986); *In re Howarth*, 654 F.2d 103, 105 (CCPA 1981) ("An inventor need not, however, explain every detail since he is speaking to those skilled in the

In view of the prevailing guidance from the MPEP and the courts, the Applicants respectfully maintain their position that the claimed subject matter is adequately described by the instant specification.

In further support of their position, the Applicants respectfully submit that how enzymes may be combined to produce a claim-recited enzymatic complex would be readily apparent to one of skill in the art in view of the description set forth in page 5, line 21 to page 6, line 9 and page 13, line 20-page 13, line 3 and Fig. 1A, for example. Fig. 1A is reproduced below for the Examiner's convenience:



In view of this description, one of skill in the art would, for example, select a class of enzymes (see, e.g., page 14, lines 1-17), introduce a first set of binding sequences into those enzymes (see, e.g., page 8, lines 13-28), and combine those enzymes in a suitable cell (see, e.g., page 32, lines 3-19) with a scaffold containing a second set of binding sequences complementary to the first set of binding sequences (see, e.g., page 9, lines 9-17). This is all that is required to make an example of a claim-recited enzymatic complex.

One of skill in the art would know how to engineer an enzyme with a binding sequence since such technology has been routinely used for the last several years to introduce binding sites into cellular proteins. For example, one of skill in the art would recognize that proteins can be engineered to have a vast array of well-characterized sites of protein-protein interaction (e.g., a PDZ domain, a SH2 domain,

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art."); *In re Lange*, 644 F.2d 856, 863 (CCPA 1981). We thus have noted that "[n]ot every last detail is to be described, else patent specifications would turn into production specifications, which they were never intended to be." *In re Gay*, 309 F.2d 769, 774 (CCPA 1962).

a SH3 domain, a WD-40 domain, a GAL4 dimerization domain, a leucine zipper, etc.), epitopes (e.g., FLAG, HA, myc, etc.), and other sequences (e.g., HIS, GST and MBP) to provide exogenous binding sequences (see, e.g., page 8, lines 25-29). This technology was very well known in the molecular biological arts at the time of filing and readily adaptable to the instant methods.

In view of the foregoing discussion, the Applicants respectfully submit that one of skill in the art, upon reading the instant patent application, would instantly understand the concept of the invention, and would thereby recognize that the inventors had possession of the invention. Any details necessary for practicing the invention were well known in the art at the time of filing, and, as such, do not need to be described in the instant specification in order to meet the written description requirement of 35 U.S.C. § 112.

The Applicants respectfully submit that this rejection has been adequately addressed by the foregoing discussion. Accordingly, withdrawal of this rejection is respectfully requested.

### **Rejection under 35 U.S.C. §103**

Claims 81 and 83 are rejected under 35 U.S.C. § 103(a) as being unpatentable in view of Khosla (U.S.P.N. 6,391,594) “for the reasons set forth in the last office action”. As noted above, the Applicants note that no rejections under 35 U.S.C. §103(a) were made in the last Office Action, and, as such, this Office Action contains an error since it refers to a rejection in a prior Office Action that was never actually made.

The Applicants cannot fully respond to this rejection since the reasoning supporting the rejection can only be guessed at.

However and solely in order to expedite prosecution, the Applicants wish to point out that Khosla’s disclosure fails to disclose, teach or fairly suggest “binding sequences” as recited in the instant claims.

The claims recite: a) a scaffold containing binding sequences, and b) enzymes that contain further binding sequences that bind to the scaffold via the scaffold’s binding sequences. Binding sequences are thus an element of the claims.

Khosla's disclosure solely relates to an enzymatic complex (specifically, a polyketide synthase) in which the enzyme domains of the complex are joined together in a single fusion polypeptide, i.e., in *cis*.

Khosla makes no mention of binding sequences or of any complex in which enzymes are bound to a scaffold via binding sequences that are present in the scaffold and enzymes. The instant claims specifically recite that the scaffold comprises at least a first binding site and a second binding site, where a first enzyme binds to the first binding site and a second enzyme binds to the second binding site. This arrangement of elements is simply not disclosed in Khosla. Khosla does not disclose, teach or fairly suggest the use of enzyme binding sequences to make a polyketide synthase complex.

In fact, since Khosla's entire disclosure is directed to making polyketide synthases in which modular enzymatic domains are joined as part of the same polypeptide chain, i.e., in *cis*, Khosla, as a point of fact, teaches away from the claims, which require enzymes joined to a scaffold using binding sequences (i.e., and are therefore joined in *trans*).

In view of the foregoing discussion, withdrawal of this rejection is respectfully requested.

As discussed above, should this argument prove unpersuasive, the Applicants respectfully request that this Office Action be withdrawn, and replaced by a revised Office Action fully explaining the reasoning behind this rejection, including a reasons showing how Khosla discloses or fairly suggest binding sequences, as discussed above.

Claims 81 and 83 are rejected under 35 U.S.C. § 103(a) as being unpatentable in view of Nolan (U.S.P.N. 6,365,344).

The Applicants submit that the subject matter of the cited Nolan patent and the claimed invention were, at the time the invention was made, assigned or under obligation of assignment to Rigel. Accordingly, Nolan cannot preclude the patentability of the rejected claims, and this rejection may be withdrawn.

Support for this assertion is set forth below:

35 U.S.C. § 103 (a) states that a patent may not be obtained if the differences between the claimed subject matter and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made<sup>4</sup>.

35 U.S.C. § 103 (c), however, makes an exception as to what art can be used in a rejection under § 103(a). § 103 (c) states that subject matter developed by another person shall not preclude patentability under § 103(a) where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.<sup>5</sup>

According to 35 USC § 103(c), therefore, the Nolan patent cannot preclude the patentability of the rejected claims if the Nolan patent and the instant application were assigned to the same person or subject to an obligation of assignment to the same person, at the time the instant invention was made.

The facts of the present case are as follows:

The invention claimed in the instant patent application was owned by Rigel Pharmaceuticals, Inc. ("Rigel") or subject to an obligation of assignment to Rigel at the time the instant invention was made, as evidenced by an assignment executed by the inventors (Reel/Frame 8822/0348).

The Nolan patent was owned by Rigel or subject to an obligation of assignment to Rigel at the time the instant invention was made, as evidenced by an assignment executed by the inventors (Reel/Frame 012048/0286).

Thus, the Nolan patent and the claimed invention were, at the time the invention was made, assigned or under obligation of assignment to Rigel. Accordingly, the facts of the instant situation fit the requirements of § 103(c), and Nolan cannot preclude patentability of the instant claims under § 103(a). That is, § 103 (c) dictates that Nolan can not be used as prior art under § 103 (a).

In view of the disqualification of Nolan as a prior art reference, this rejection may be withdrawn.

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<sup>4</sup> 35 U.S.C. 103(a) : A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

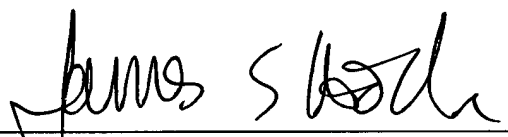
<sup>5</sup> 35 U.S.C. 103(c): Subject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f), and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

**SUMMARY**

The Commissioner is hereby authorized to charge any underpayment of fees associated with this communication, including any necessary fees for extensions of time, or credit any overpayment to Deposit Account No. 50-0815, order number RIGL-014.

Respectfully submitted,  
BOZICEVIC, FIELD & FRANCIS LLP

Date: Sept. 30, 2004

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